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## LEIOMYOMA OF THE SCROTUM : A CASE REPORT AND SONOGRAPHIC FINDINGS

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A rare case of leiomyoma of the scrotum is presented, and its ultrasonographic features are described. The ultrasound was of great help in the successful management by simple excision of the tumor.

**Key words:** Leiomyoma, Scrotum, Ultrasonography

### INTRODUCTION

Leiomyomas arising from the tunica dartos scroti are exceedingly rare and less than 30 cases have been reported in the English literature<sup>1-6)</sup>. In the Japanese literature, 10 cases of intrascrotal leiomyoma have been reported<sup>7-9)</sup> and 4 cases have been described as leiomyoma of tunica dartos<sup>8,9)</sup>. Only one report described the sonographic features of the tumor<sup>5)</sup>. We report a case of leiomyoma of the scrotum and describe its sonographic findings.

### CASE REPORT

A 58-year-old Japanese male was admitted to our hospital because of a left scrotal mass. He had noticed a bean-sized lump in the left scrotum about 30 years ago, and the mass had enlarged gradually since then. He complained of slight dull pain in the left scrotum. On admission, physical examination revealed a firm, elastic, round mass, about 4 cm in diameter, on the left side of the scrotum. The mass seemed to be separate from the testis, the epididymis, and the cord by palpation. All laboratory data were normal.

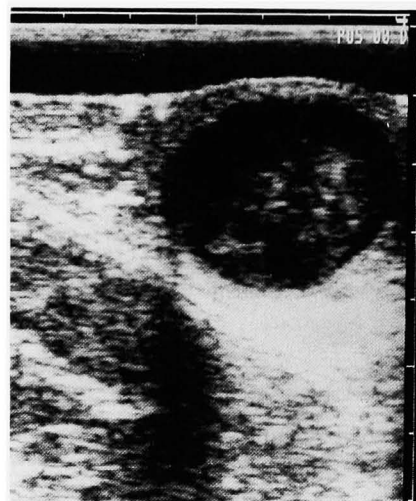
Ultrasonography of the scrotum revealed a mass of mixed echogenicity (Fig. 1A). There were multiple fine blurred echo-poor areas intermingled with relatively hyperechogenic structures. The margin of the mass was well-defined, but encapsulation of the mass was not obvious. The mass proved to be completely separate from the testis, the tunica vaginalis, and the

cord by ultrasound (Fig. 1B).

The scrotal mass was excised with a small area of overlying skin through a small scrotal incision. The mass was easily removed, and the tunica vaginalis was not opened. The incision was closed primarily. Postoperative course was uneventful. On gross pathologic examination, the mass measured approximately 4.5 by 4.0 by 3.0 cm and consisted of firm, pale yellowish fasciculated structures. It had no adhesion to the overlying skin. Microscopically, the mass consisted of interlacing bundles of smooth muscle cells (Fig. 2A). The nuclei of the cells were almost uniform with no mitosis (Fig. 2B). The diagnosis was leiomyoma of the tunica dartos scroti.

### DISCUSSION

Leiomyomas of the genitourinary tract may originate from any structure or organ containing smooth muscle<sup>6)</sup>. Leiomyomas arising from the tunica dartos scroti are exceedingly rare. Less than 30 cases have been reported in the English literature<sup>1-5)</sup>. In the Japanese literature, 10 cases of intrascrotal leiomyoma have been reported<sup>7-9)</sup>. Of the 10 cases, four are described as originating from tunica dartos and four tunica vaginalis<sup>7-9)</sup>. Most patients had noticed the mass for some time and had no specific symptoms. Some cases of leiomyoma of the scrotum were found incidentally during physical examination for inguinoscrotal surgery. The treatment in most cases was simple surgical excision by scrotal incision, but orchiec-



A

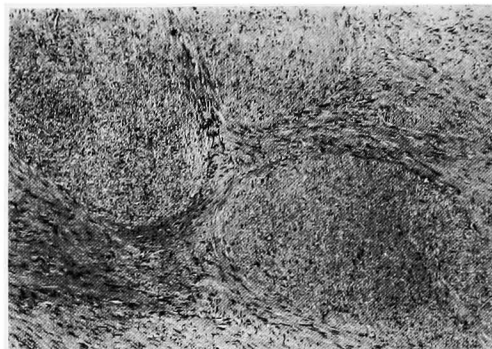


B

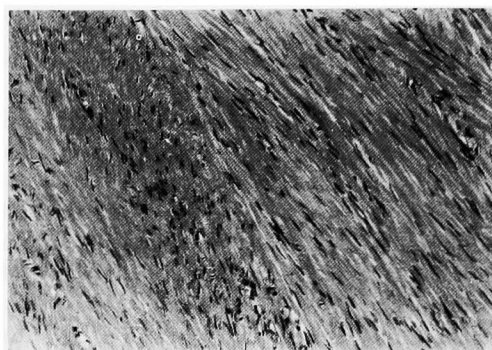
- Fig. 1A. Scrotal ultrasound of the tumor shows multiple blurred sonolucent spots intermingled with echogenic structures. Note the clear margin of the mass.
- 1B. Normal left testis (T) and serous cavity of tunica vaginalis (arrow). The tumor was completely separated from the testis.

tomy with excision of the tumor was performed in some cases<sup>2,3,9)</sup>

In dealing with intrascrotal tumors, it is exceedingly important to identify and differentiate paratesticular from testicular origins. The inguinal surgical approach is mandatory in dealing with tumors of testicular origin because of their high



A



B

Fig. 2. Microscopic appearance of the tumor shows typical features of leiomyoma.

A, Note the interlacing bundles of smooth muscle cells. H & E, reduced from  $\times 40$ .

B, Uniform, long nuclei without mitosis. H & E, reduced from  $\times 100$ .

incidence of malignancy. The inguinal approach is also applicable for tumors arising in the spermatic cord, because of the high frequency of malignant neoplasms in this region<sup>10)</sup>. However, adequate local excision through scrotal approach is applicable for some tumors of paratesticular region<sup>11)</sup>. For leiomyoma of the scrotum, although the inguinal surgical approach has been performed in some reported cases, simple surgical excision is adequate and is the treatment of choice<sup>12)</sup>. Therefore, preoperative assessment of the intrascrotal tumor, especially its location, size, extension, and relation to the testis, is mandatory in deciding the surgical approach.

Ultrasound is the modality of choice

for understanding and identifying intrascrotal tumors<sup>12)</sup>. It is useful in evaluating the features of the tumor itself as well as in distinguishing lesions that involve the testicular parenchyma or tunica albuginea from lesions of extratesticular origin. If the tumor cannot be distinguished completely from that originating from testis or cord structures by clinical findings including ultrasonography, it is prudent to explore it inguinally with early control of spermatic vessels. But, the review of the literature shows some intrascrotal tumors, including leiomyoma of the scrotum, can be treated by local excision<sup>1,11)</sup>. In our case, the tumor was clearly differentiated from tumor of testicular or cord structural origin. Furthermore, ultrasound showed a well-defined tumor with no extension to surrounding structures. Because of these findings, we decided to excise the tumor by scrotal approach. The tumor was completely excised by scrotal incision without even opening the tunica vaginalis.

Only one previous report, that by Giyanani et al., described the ultrasonographic features of scrotal leiomyoma<sup>5)</sup>. The sonographic appearance in our case was somewhat different from the previously reported features, which were those of a multicystic tumor with multiple sonolucent areas separated by high echogenic septa. The sonolucent areas represented necrotic areas seen in the specimen in their case. In our case, the tumor had neither necrotic nor severely hyalinized areas. The heteroechogenicity with blurred sonolucent spots probably represented differently directed and arranged bundles of muscle fibers, forming a whorling appearance (Fig. 2A). This ultrasonographic feature may be typical of leiomyoma of the scrotum. Because of the scarcity of the previous reports, ultrasonographic features of leiomyoma and leiomyosarcoma cannot be discussed. Though a malignant change cannot be defined by an ultrasonographic study, further understanding and identification of benign intrascrotal tumors can

avoid unnecessary orchiectomy or invasive surgical approach for those tumors.

Leiomyoma of the scrotum is a rare benign tumor but should be considered in the differential diagnosis of scrotal masses. Ultrasonography is a valuable tool in assessment of intrascrotal tumors including leiomyoma of the tunica dartos scroti.

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## 和文抄録

## 陰 囊 内 平 滑 筋 腫 の 一 例

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陰嚢内の肉様膜由来の平滑筋腫の一例を報告する。58歳の男性がゴルフボール大，弾性硬の右陰嚢内腫瘍を主訴として来院した。触診，超音波検査所見上，この腫瘍は右精巣，精巣上体，精索とは離れていた。腫瘍は陰嚢皮膚切開により，陰嚢総鞘膜も開けることなく簡単に切除できた。標本は  $4.5 \times 4.0 \times 3.0$  cm 大であり，組織学的には不規則な索状配列をとる平滑筋束から成っており，悪性所見はなく平滑筋腫と診断された。由来は陰嚢肉様膜と考えられた。精巣，精巣上体および精索以外の組織から発生する陰嚢内平滑筋腫は稀であり，文献的に日本において10例の報告例はあるが，そのうち4例は肉様膜由来であり，4例は総鞘膜由来である。陰嚢内平滑筋腫に対して，治療は陰嚢皮膚切開による腫瘍摘出のみで十分である。精巣腫瘍や精索腫瘍などでは鼠径部に切開をおく高位のアプローチが必要

であることを考慮すると，陰嚢内腫瘍に対しその進展度，発生部位，周囲との関係を知ることは非常に重要である。超音波検査はこの意味で陰嚢内の腫瘍性病変に対し非常に有用な情報を与えてくれる。本症例では術前の超音波検査により腫瘍が完全に精巣，精巣上体および精索とは離れていることが示された。超音波検査所見上，腫瘍は境界明瞭であり，hyperechogenicな部分とhypoechoic部分が混在していた。これは不規則に配列する平滑筋線維束によるものと考えられた。陰嚢内平滑筋腫は稀ではあるが，陰嚢内の腫瘍性病変の鑑別診断として考慮すべきであり，超音波検査は術前評価，外科的治療の方針決定に際し有用であった。

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